

CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

REPORT

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COUNTRY USSR (Kuybyshev Oblast)

DATE DISTR. 24 June 1955

SUBJECT Activities at Zavod No. 2, Kuyb shev

NO. OF PAGES 5

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ACQUIRED

NO. OF ENCLS.
(LISTED BELOW)

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DATE OF INFO.

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COUNTRY	USSR	REPORT
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TOPIC Activities at Experimental Plant No 2 In Upravlencheski Gorodok		
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EVALUATION	PLACE OBTAINED	
DATE OF CONTENT		
DATE OBTAINED	DATE PREPARED	15 December 1954
REFERENCES		
PAGES	ENCLOSURES (NO. & TYPE)	1 - one sketch on ditto
REMARKS This is UNEVALUATED Information		

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P-130 Diesel Power Unit.

1. The P-130 had been projected at the Junkers Plant in Dessau in 1944 and 1945. Details were obtained only on the low pressure compressor; other information was obtained in conversations with other experts, primarily with Dipl Ing Guenther Lange. The P-130 was believed to be a power unit combining a diesel engine and a thrust nozzle. About 15 percent of the air flow which branched off from the fourth stage of the axial low pressure compressor was fed to a small high pressure compressor. The system resembled to by-pass principle or dual flow turbo-jet unit. The tapping was similar to the system of the JUMO-004. The branched-off air was used to charge a diesel engine which in turn was to drive a propeller and the two above-mentioned compressors. The remaining 85 percent of the air flow was used to cool the diesel engine and then to be bled into a thrust nozzle which was similar to the Lorin type unit. The output of the diesel exhaust gases was used to increase the thrust. The higher efficiency of the propeller drive was to be used for take offs and for speeds up to about 850 km/h up to medium altitudes, while the thrust nozzle was to be activated for speeds of more than 850 km/h and at higher altitudes with the propeller switched to feathered position.
2. According to Dipl Ing Guenther Lange who had designed the diesel engine, the unit was allegedly not related to any Junkers type diesel engines previously developed. The projecting work at Dessau did not exceed the preliminary theoretical projecting and calculating. At Upravlencheski, the project was continued and further developed until it was dropped when it became apparent that with the small dimensions required, the diesel engine was thermically and dynamically overloaded. The project was never resumed. No information was obtained on the type of construction, number of cylinders, dimensions and the projected output of the diesel engine and the thrust nozzle. 1

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PTL-022 A Turboprop Engine

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3. The Cyrillic designation and the code number for the turbine blade material was not remembered. [redacted]

[redacted] the alloy was 85 percent cobalt.² [redacted] it had been repeatedly mentioned that the cobalt content of the alloy was unusually high and that "the stuff nearly contained nothing but cobalt". The material was ground. Ing Weckwerth (fnu) might be able to supply further information on the material.

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4. In the summer of 1950, a compression ratio of 1 to 6.3 was obtained by altering the sizing of the compressor blades, [redacted]

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Staffkys and Labyrinths in the PTL-022.

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5. The staffkys were installed only in the turbine to fill the space between turbine blades and jacket and not in the compressor as was previously stated. Notches with a dove-tail groove were milled into the turbine jacket and the individual "Staffkys" were inserted to fill out this recess by forming an internal ring. Some staffkys in the turbine jacket were screwfastened to the turbine jacket to prevent them from moving in the direction of rotation. ³ The labyrinths were installed between rotor unit and stator blades. No further information could be obtained.⁴ These mechanical improvements effected a reduction of the losses occurring at the tips of the rotor unit, the turbine blades and the turbine jacket so that within the calculated temperatures the space between would no more be effected by the expanding material. No information could be obtained on these activities. ⁵

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1. Comment. During the last years of World War II, a combined power unit with propeller drive and thrust nozzle and a propeller adjustment for feathered position at higher speeds had been mentioned at the development department for power units of the Reichsluftfahrtministerium (Ministry of Aviation).

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2. Comment. An 85 percent cobalt alloy is improbable.

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3. Comment. For a sketch of the staffky graphite packing, see Annex. The present information clarifies the type of construction and function of the packing, the so-called staffkys, which could not be determined from previous contradictory information.

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4. Comment. For a sketch of the probable labyrinth arrangement, see Annex. The sketch was prepared by this project. Further information is required to obtain clarification.

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5. Comment. These experiments are reported for the first time.

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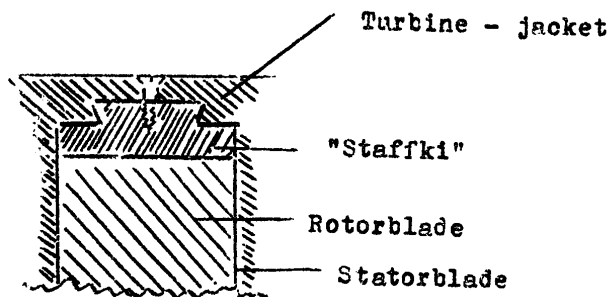
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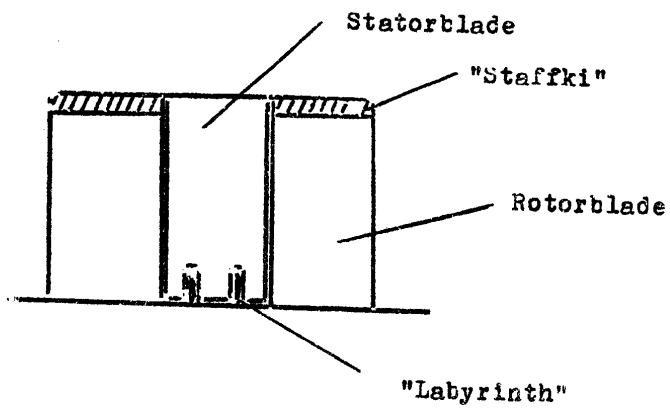
Packing of Compressor of an O-22 Turboprop Engine

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Sketch 1



Sketch 2



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